

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on March 10, 2003, and the references cited therewith.

Claims 21 and 31 are amended; as a result, claims 1-3, 5-11 and 21-40 remain pending in this application.

§112 Rejection of the Claims

Claims 1-3, 5-11, and 21-40 were rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The Examiner has rejected claims 1-3, 5-11 and 21-40 because the Examiner asserts that the limitation “an atmosphere free of argon” is not supported by the Specification because the specification refers to an atmosphere that includes an inert gas. The Applicant has amended the claims to refer to “an atmosphere [free of argon comprising] consisting essentially of oxygen plasma as the gas present in the greatest concentration wherein the oxygen plasma flow rate is at least about 300 sccm oxygen to about 2000 sccm and helium in a concentration of about 400 to 1000 sccm and the atmosphere renders the substrate resistant to profile distortion and roughening to make a treated substrate.” Support for this amendment can be found on page 10, lines 5-6.

§102 and §103 Rejection of the Claims

Claims 1, 2, 5, 9-11, 21, 22, 24, 28-32, 34, and 38-40 were rejected under 35 USC § 102(e) as being anticipated by Puntambekar et al. (U.S. Patent No. 5,821,603). Claims 3, 6-8, 23, 25-27, 33, and 35-37 were rejected under 35 USC § 103(a) as being unpatentable over Puntambekar et al.

As has been discussed in previous responses, the Puntambekar patent describes the importance of argon in roughening a surface. The gas flows described in the Putambekar reference all have concentrations that are predominantly argon. There is no suggestion that another inert gas is suitable. In contrast, the claimed gas flowrate in the present application

BEST AVAILABLE COPY

consists essentially of oxygen and helium, in order to AVOID surface roughening. Argon is not one of the gas flows claimed.

The Puntambekar reference describes an end result much different from what is claimed in the present invention. As has been discussed in previous correspondence, the claims of the present invention utilize an oxygen flowrate much greater than is described in the Puntambekar reference, and a flow where oxygen is predominant. The claims do not identify a use of argon in order to roughen the silicon nitride surface. To the contrary, the claims describe a use of helium. This is no accident. The desired result of the present invention is a surface free of discontinuities. Table II, of the Putambeker reference, cited by the Examiner, includes Argon to create the surface roughening. The desired result of the Puntambekar reference is a roughened surface. Puntambekar did not contemplate that one could create a surface resistant to discontinuity by treating it in an atmosphere of about 300 sccm to 2000 sccm oxygen, at a vacuum of 3 to 6.5 Torr and a flowrate of about 400 to 1000 sccm helium, such as is claimed in the present invention. Thus, the Puntambekar reference does not anticipate the present invention or render the present invention obvious.

BEST AVAILABLE COPY

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at 612-373-6976 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

ZHIPING YIN ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
612-373-6976

Date 12 May 03

By J. M. Kalis
Janal M. Kalis
Reg. No. 37,650

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O.Box 1450, Alexandria, VA 22313-1450, on this 12 day of May, 2003

Tina Kohout

Name

Z. Yin

Signature

BEST AVAILABLE COPY